

## Standard Current Transformer 10:1 (40A), 100:1 (400A)

### Type CT-2FRO

### Instruction Manual

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## **1 Safety precautions**

### **1.1 Safety**

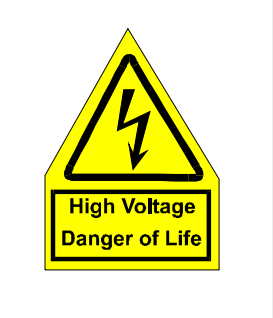
The instrument described in this manual is designed to be used by properly trained personnel only. Adjustment, maintenance and repair of the exposed equipment should be carried out only by qualified personnel aware of the hazards involved.

### **1.2 Safety precautions**

For correct and safe use of this instrument it is essential that both operation and service personnel follow generally accepted safety procedures in addition to the safety precautions specified in the manual. Specific warning and caution statements, where they apply, will be found throughout the manual. Safety is the responsibility of the user.

**Warning!**

**The Instrument is an electronic system foreseen and designed for low voltage operation. The whole equipment works in high voltage environment and therefore all instructions and precautions which apply for such operations have to be considered working with the measuring instrument.**

A yellow triangular warning symbol with a black lightning bolt in the center, indicating high voltage. Below the triangle is a rectangular box with the text "High Voltage" and "Danger of Life" in black.

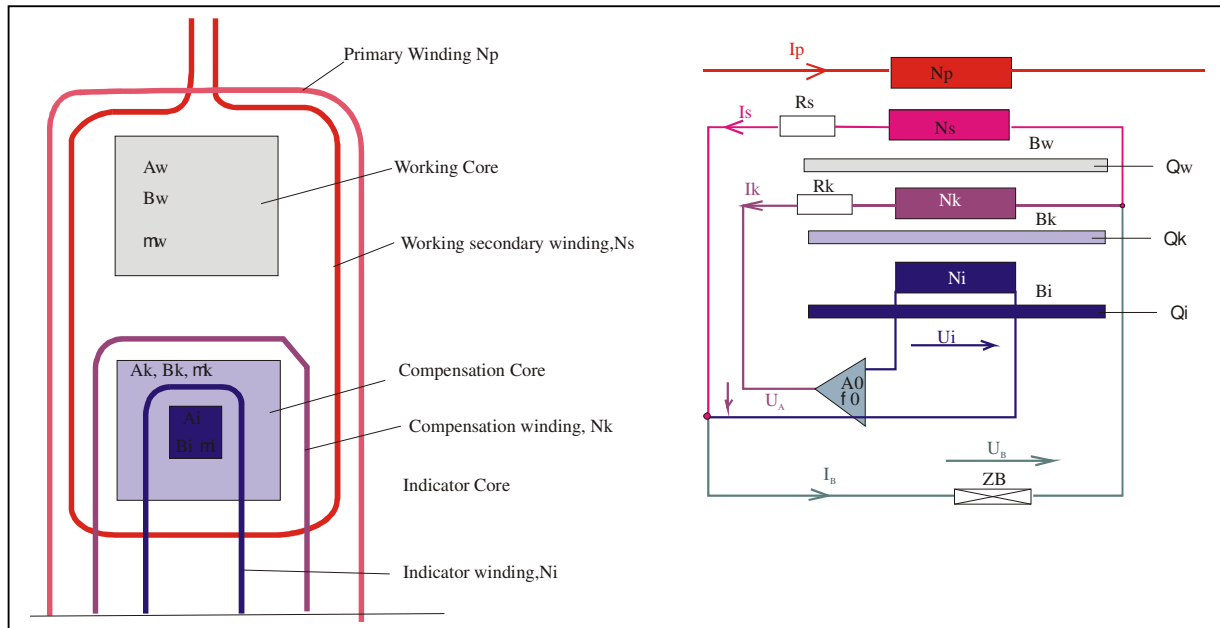
### **1.3 Impaired safety precautions**

Whenever it is likely that safety protection has been impaired, the instrument must be made inoperative and be secured against any unintended operation. Safety protection is likely to be impaired if, for example, the instrument fails to perform the intended measurements or shows visible damage.

## 2. Introduction

### 2.1 Function Principle

The unit is made from a magnetic current transformer/Comparator and an electronic compensation unit:



The primary current flows in the winding  $N_p$  and magnetizes all the three cores:

- $Q_w$  Working core
- $Q_k$  Compensation core
- $Q_i$  Indicator core

The secondary working winding ( $N_s$ ) sends a current to the Burden of the transformer. The magnetizing effect of the secondary current is subtracted from the magnetizing of primary. The  $N_i$  "Indicator winding" detects a voltage proportional to the difference of magnetizing and with the high gain amplifier  $A_0$  sends a compensating current to the compensating winding  $N_k$ . This regulation loop trends to reduce the allover magnetizing in the cores  $N_k$  and  $N_i$  and because the  $I_k$  is fed to the output, the overall input current makes a "zero flux" CT. By it the errors will be lower

**3. Technical Data****3.1. Specification in Reference Range**

Secondary nominal current	4 A
Primary ratios and nominal currents	1:10 / 40A , 1:100 / 400A
Working range	1 ... 120% of nominal current
Rated frequencies	50 and 60 Hz
Tolerance of the ratio	± 10 ppm
Tolerance of the phase	± 10 µrad
Allowed maximal Burden on the secondary	5 VA

Weight	15.5 kg
Dimensions	34 x 24 x 42 cm
Mains Supply	230 V / 50 / 60 Hz / 50 VA

<b>Reference conditions:</b>	
Temperature	23 °C ± 2 °C
Humidity, not condensing	40 ... 75%
Barometric pressure	70 ... 106 kP
<b>Rated range of use</b>	
according to standard IEC 359	
Temperature	10 °C ... 40 °C
Barometric pressure	70 ... 106 kPa

## 4 Operation

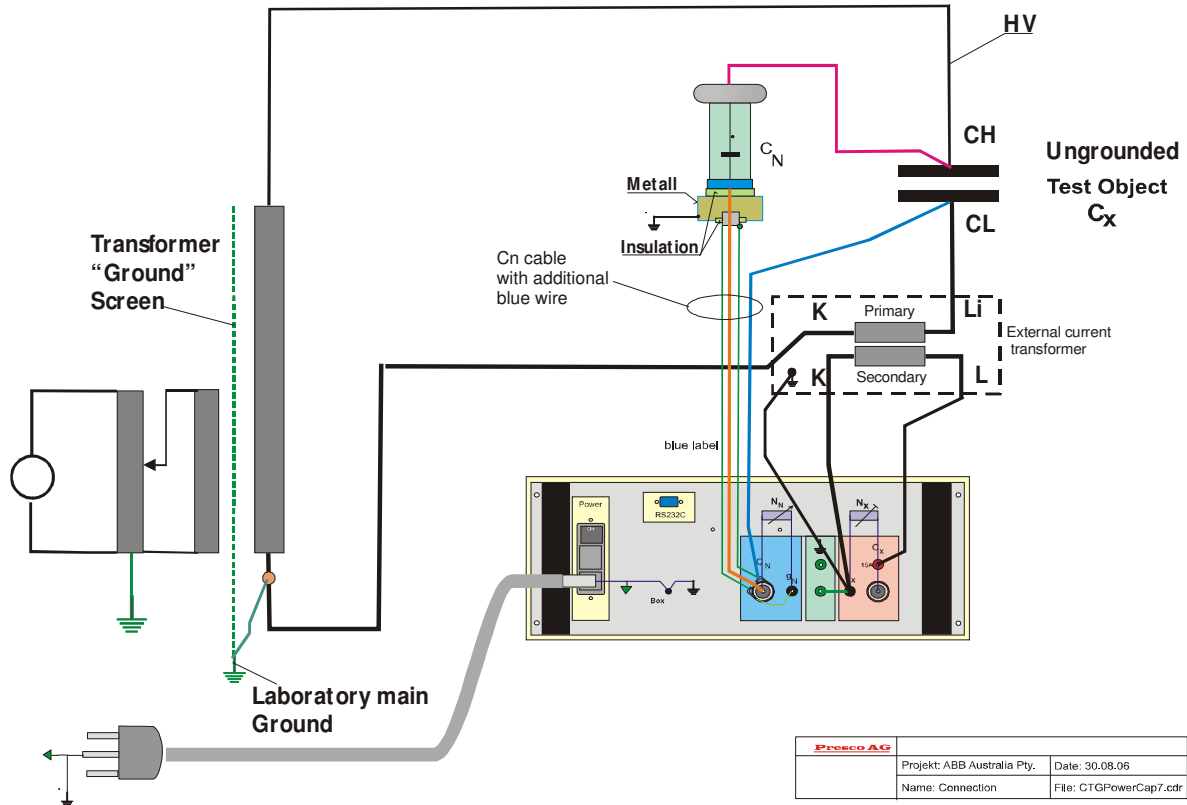
### 4.1 Connections



Legend:

1. "K" Common point of primary windings
2. Terminal primary "L1", ratio 1:10, Nominal current 40A
3. Terminal primary "L2". ratio 1:100, Nominal current 400 A
5. Power control light
6. Power connector 230V, 1 A
7. Terminal secondary "I", Nominal current 4A
8. Terminal secondary "k", Nominal current 4A, for correct working do ground this terminal
9. Ground: the ground conductor of power line connector
10. Guard: The terminal of the Screen between primary and secondary

## 4.2 Example test set-up



## 5 Servicing

Repair work and maintenance can only be done by qualified personnel of Presco AG. In case of problems please contact the representative which delivered the instrument or Presco AG directly.